Sheet 2

1- A lossless T.L having characteristic impedance of 600 Ω is terminated by a resistor of 300 Ω. Calculate the voltage standing wave ratio of the line.

2- A T.L having characteristic impedance of 600 Ω is terminated by a reactance of j150 Ω. Find the input of a section 25 cm long at frequency of 300 MHz .

3- A T.L having characteristic impedance of 200 Ω and 25 cm length is connected to a load of (100+j100) Ω. The frequency is 300 MHz , What is the input impedance of the line .

4- A co-axial cable having characteristic impedance of 50Ω is to feed a dipole antenna of 75Ω. Design the necessary matching unit.

5- A lossless T.L having characteristic impedance of 60 Ω is connected to a resistive load .if the standing wave ratio is 4 calculate:-

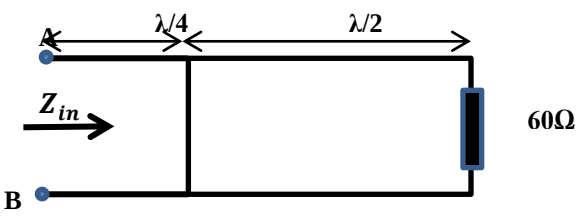
a) The value of load impedance.

b) The reflection coefficient at the load

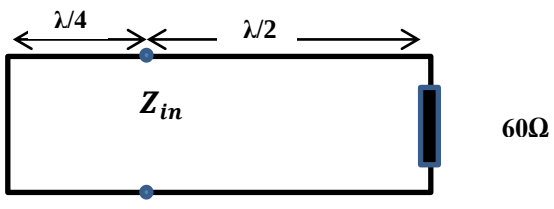
6- An ideal lossless quarter wave (λ/4) T.L of characteristic impedance of 60Ω is terminated in a load Z_L find Z_{in} when:

a) $Z_L = 0$ **b) $Z_L = \infty$** **c) $Z_L = 60\Omega$**

7- A lossless T.L having characteristic impedance of 60 Ω is connected as shown in Fig a,b . Calculate Z_{in} of the line across the input terminal AB in each case.



(a)



(b)